

**10/575100**

**IA P20 Rec'd PCT/PTO 10 APR 2006**

**THE FOLLOWING ARE THE ENGLISH TRANSLATION  
OF ANNEXES TO THE INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT (ARTICLE 34):**

Amended Sheets (Pages 22-25)

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Claims:

1. A process for preparing benzoic esters whose  
alkoxy groups have from 7 to 13 carbon atoms by  
5 reacting benzoic acid with at least one alcohol  
having from 7 to 13 carbon atoms, the water of  
reaction formed being removed from the reaction  
mixture during the esterification reaction by  
distillation with the alcohol used in excess, and  
10 the alcohol not converted in the esterification  
reaction being removed after the esterification  
reaction,  
characterized  
in that the reaction takes place in the presence  
15 of a tin(II) compound as catalyst at a temperature  
of 160 to 250°C and in that, without treatment  
with a base, the catalyst and/or its tin-  
containing derivatives are removed by filtering or  
by centrifuging from the reaction mixture which  
20 remains after the unconverted alcohol has been  
separated off, to an extent such that the tin  
content of the end product (filtrate) is below  
1 mg/kg (ppm) and in that alcohols used are  
heptanols, 1-octanol, 2-octanol, 2-ethylhexanol,  
25 nonanols and/or tridecanols.
2. The process of claim 1,  
characterized  
in that a mixture of alcohols with the same or  
30 different number of carbon atoms is used.
3. The process of claim 1 or 2,  
characterized  
in that the unconverted alcohol is removed by  
35 stripping, distilling or steam-distillation or by  
a combination of two or more of these methods.

4. The process of at least one of claims 1 to 3,  
characterized  
in that the unconverted alcohol is separated off  
after the esterification reaction by vacuum  
5 distillation and subsequent stripping with steam  
or nitrogen.
5. The process of at least one of claims 1 to 4,  
characterized  
10 in that the catalyst is separated off at a  
temperature below 160°C.
6. The process of at least one of claims 1 to 5,  
characterized  
15 in that the catalyst and/or derivative(s) thereof  
is/are separated off from the reaction mixture,  
after the alcohol has been separated off and  
without base treatment, by filtration at  
temperatures below 130°C.
- 20 7. The process of at least one of claims 1 to 6,  
characterized  
in that the volume of liquid removed from the  
reaction mixture during the esterification by  
25 (azeotropic) distillation is made up in whole or  
in part with the reactant alcohol or reactant  
alcohol mixture.
8. The process of at least one of claims 1 to 6,  
30 characterized  
in that the volume of liquid removed from the  
reaction mixture during the esterification by  
(azeotropic) distillation is partly recycled, by  
separation of the liquid separated off into an  
35 aqueous phase and an organic phase, and recycling  
of the organic phase into the esterification  
reaction.

9. The process of at least one of claims 1 to 6,  
characterized  
in that the volume of liquid removed from the  
reaction mixture during the esterification by  
(azeotropic) distillation is made up in whole or  
in part, by separation of the liquid separated off  
into an aqueous phase and an organic phase and  
recycling the organic phase, additionally admixed  
with fresh alcohol, into the esterification  
reaction.
10. The process of at least one of claims 1 to 6,  
characterized  
in that the volume of liquid removed from the  
reaction during the esterification by (azeotropic)  
distillation is made up in whole or in part with  
the fresh alcohol.
11. The process of at least one of claims 1 to 10,  
characterized  
in that tin(II) salts of monocarboxylic or  
dicarboxylic acids are used as catalyst.
12. The process of at least one of claims 1 to 11,  
characterized  
in that a molar ratio of tin to benzoic acid of  
 $10^{-5} : 1$  to  $10^{-3} : 1$  is set at the beginning of the  
reaction.
13. The process of at least one of claims 1 to 12,  
characterized  
in that a polymeric or ceramic membrane, composite  
membrane or paper filter is used as filter.
14. The process of at least one of claims 1 to 13,  
characterized

in that the benzoic acid is esterified to an acid number of <0.1 mg KOH/g, determined in accordance with DIN EN ISO 2114.

- 5 15. A composition comprising benzoic ester(s) and isononyl benzoate, obtainable by a process of at least one of claims 1 to 14.
- 10 16. The composition of claim 15, characterized in that the tin content of the product is below 1 mg/kg.
- 15 17. The use of the composition of one of claims 15 and 16 in paints, varnishes, adhesives or components of adhesives or as a viscosity reducer and/or plasticizer for PVC.